

Work Order ID 86903

86903

Page 1

July-09-12 10:54:02 AM

Item ID: D3196-1

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Bar

Start Date: 7/06/12 Start Qty: 4.00

4

Cust Item ID:

Required Date: 7/06/12 Req'd Qty: 4.00

4

Customer:

Reference:

Approvals: Process Plan: MLJ

Date: 12/07/10 Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start *NR1*

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D3196	Rev C

100	BAND SAW	0.00							
100	Memo	0.00							
Bandsaw									
Jeaspa Bandsaw	Cut blank: (0.75" x 1.50") x 26.200" long Bar								

12/08/03 4

110	HAAS CNC VERTICAL MACHINING #1	0.00							
110	Memo	0.00							
HAAS 1									
HAAS CNC vertical machine #1	1-Machine D3196-1 as per Folio FA339 and Dwg D3196Identify as D3196-12-Deburr								

12-08-05 (4)

120	QC2- Inspect parts off machine FAI/FAIB	0.00							
120	Memo	0.00							
QC									
Quality Control									

12-08-05

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Page 2

July-09-12 10:54:02 AM

Item ID: D3196-1 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Bar
 Start Date: 7/06/12 Start Qty: 4.00 *4* Cust Item ID:
 Required Date: 7/06/12 Req'd Qty: 4.00 *4* Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	QC8- Inspect parts - second check	0.00							
130									
QC	Memo	0.00							
Quality Control									
140	Chemical Conversion Coat per QSI005 4.1	0.00							
140									
HandFinish	Memo	0.00							
Hand Finishing									
150	Grey Sandtex(Ref:4.3.5.6) per QSI005 4.3	0.00							
150									
Powdercoat	Memo	0.00							
Powder Coating	START TIME: 3h50								
	320°F FINISH TIME: 4h20								

DAS
14
2-89

12/08/06

4

0

W

7/6/12-8-8

4

0

20

12/08/09

m(21279✓

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Page 3

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 Revision ID: Stop *NS2*
 Item Name: Bar
 Start Date: 7/06/12 Start Qty: 4.00 *4* Cust Item ID:
 Required Date: 7/06/12 Req'd Qty: 4.00 *4* Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160	QC3- Inspect Part Finish	0.00							
160						4	4	12/08/10	
QC	Memo	0.00							
Quality Control									
170	Identify as per dwg & Stock Location: 259	0.00							
170								12/8/10	
Packaging	Memo	0.00							
Packaging									
180	QC21- Final Inspection - Work Order Release	0.00							
180								12/8/13	
QC	Memo	0.00							
Quality Control									

MLJ 12/08/10

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Picklist Print

July-09-12 10:54:02 AM

Page 1

Work Order ID: 86903

Parent Item: D3196-1

Parent Item Name: Bar

Start Date: 7/06/12

Required Date: 7/06/12

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP Rev: A New Issue 05-11-08 JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M6061T6B0.750X01.500		Purchased	No			100	f	28.9064	2.183	9.1915788			
6061-T6 Bar .750 X 1.50										9.753		12/08/03	

Location	Loc Qty	Loc Code
MAT002	3.733	
116604	1.5	
118182	2	
118844	0.119	
119513	0.114	
MAT003	25.173368	
121040	25.173368	
122521		

9.753

W/O:		WORK ORDER CHANGES					
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NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:	86903
Description: Bar		Part Number:	D3196-1
Inspection Dwg: D3196	Rev: C	Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
26.094	+/-0.010	26.094	✓		m-type	
4.045	+/-0.010	4.045	✓		vern	SL-10
18.003	+/-0.005	18.003	✓		m-type	
0.750	+/-0.005	.749	✓		~	-
1.500	+/-0.010	1.497	✓		~	-
Ø0.344	+0.006/-0.001	.344	✓		~	~
Ø0.660 x 100°	+0.008/-0.001 x 0.5°	.660x100°	✓		~	~
0.060 x 45°	+/-0.010 x 0.5°	.06x45°	✓		~	~
0.750	+/-0.010	.750	✓		~	~
0.250	+/-0.010	.250	✓		~	~
3.495	+/-0.010	3.490	✓		~	~
9.000	+/-0.010	9.000	✓		vern	CNC-02
16.844	+/-0.010	16.844	✓		m-type	
21.498	+/-0.010	21.498	✓		m-type	
R0.125	+/-0.010	.125	✓		~	~
1.100	+/-0.010	1.100	✓		~	~
R0.125	+/-0.010	.125	✓		~	~
0.444	+/-0.010	.442	✓		~	~

Measured by:	SL	Audited by:	DAS 14	Prototype Approval:	N/A
Date:	12-18-05	Date:	2/00/06	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	04.04.20	New Issue	KJ/RF	
B	06.10.24	Dwg Rev. updated	KJ/JLM	
C	07.03.21	Dimensions updated per Dwg rev. C	KJ/JLM	EA

W/O:		WORK ORDER CHANGES					
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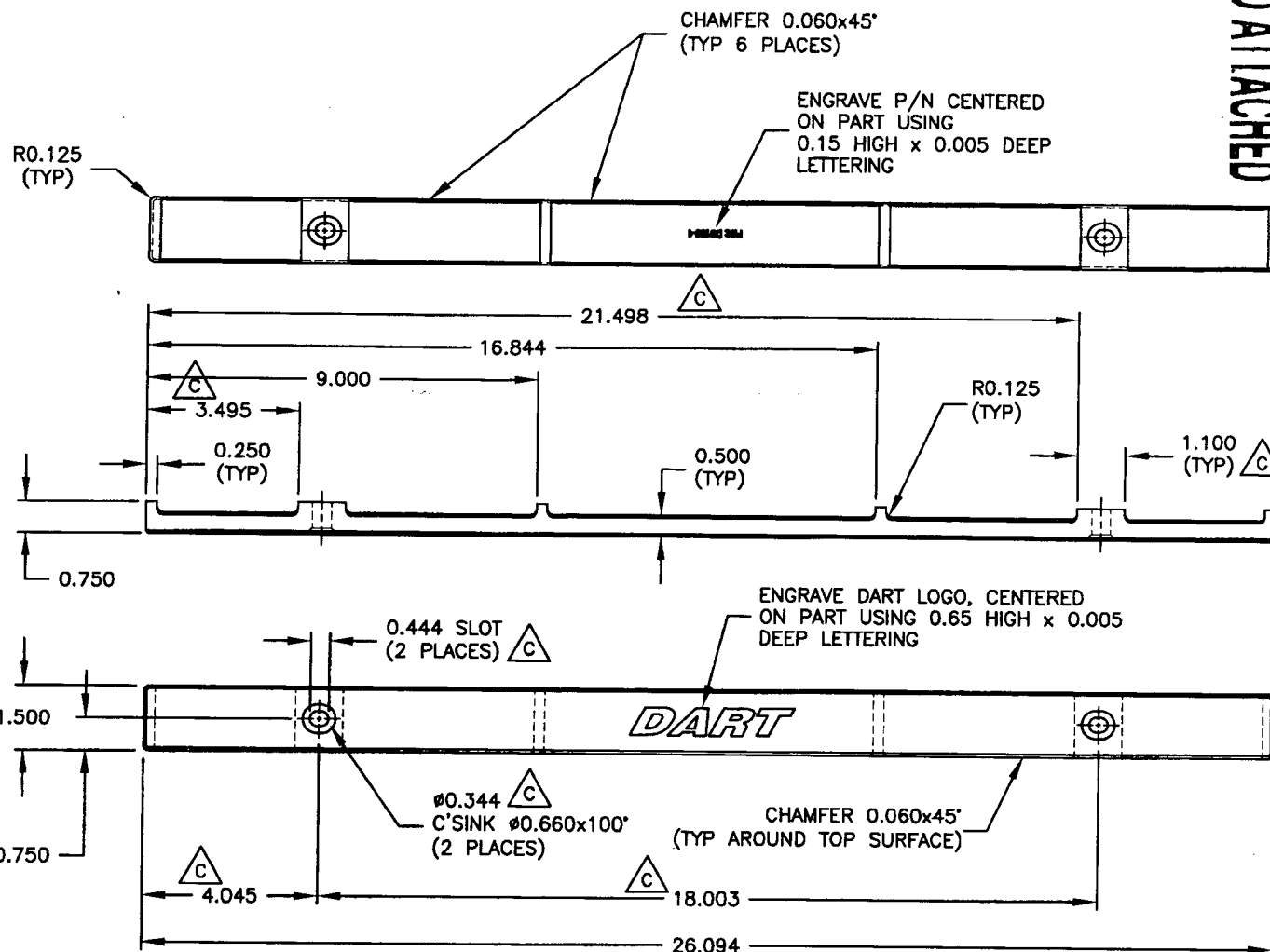
NOTE: Date & initial all entries

DART

RELEASED

06.10.31

DEO ATTACHED



D3196-1 BAR

- 1) MATERIAL: 6061-T6/T651 ALUMINUM (QQ-A-200/8 OR QQ-A-225/8) (REF DART SPEC. M6061T6B)
- 2) BREAK ALL SHARP EDGES 0.005 TO 0.010
- 3) FINISH: ACID ETCH AND ALODINE PER DART QSI 005 4.1
POWDER COAT GREY SANDTEX (4.3.5.6) PER DART QSI 005 4.3
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

869 03 MLC
12/07/10

DESIGN	DRAWN BY	DART AEROSPACE LTD
06.10.31	03.06.25	NEW ISSUE
06.10.31	06.09.25	ADD D3196-5
06.10.31	ADD SLOTS ON -1; REMOVED -5	
C	B	C
DATE	TITLE	SCALE
06.10.31	BAR	1:4
CHECKED	APPROVED	DRAWING NO.
06.10.31	06.10.31	D3196
REV. C	SHEET 1 OF 3	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

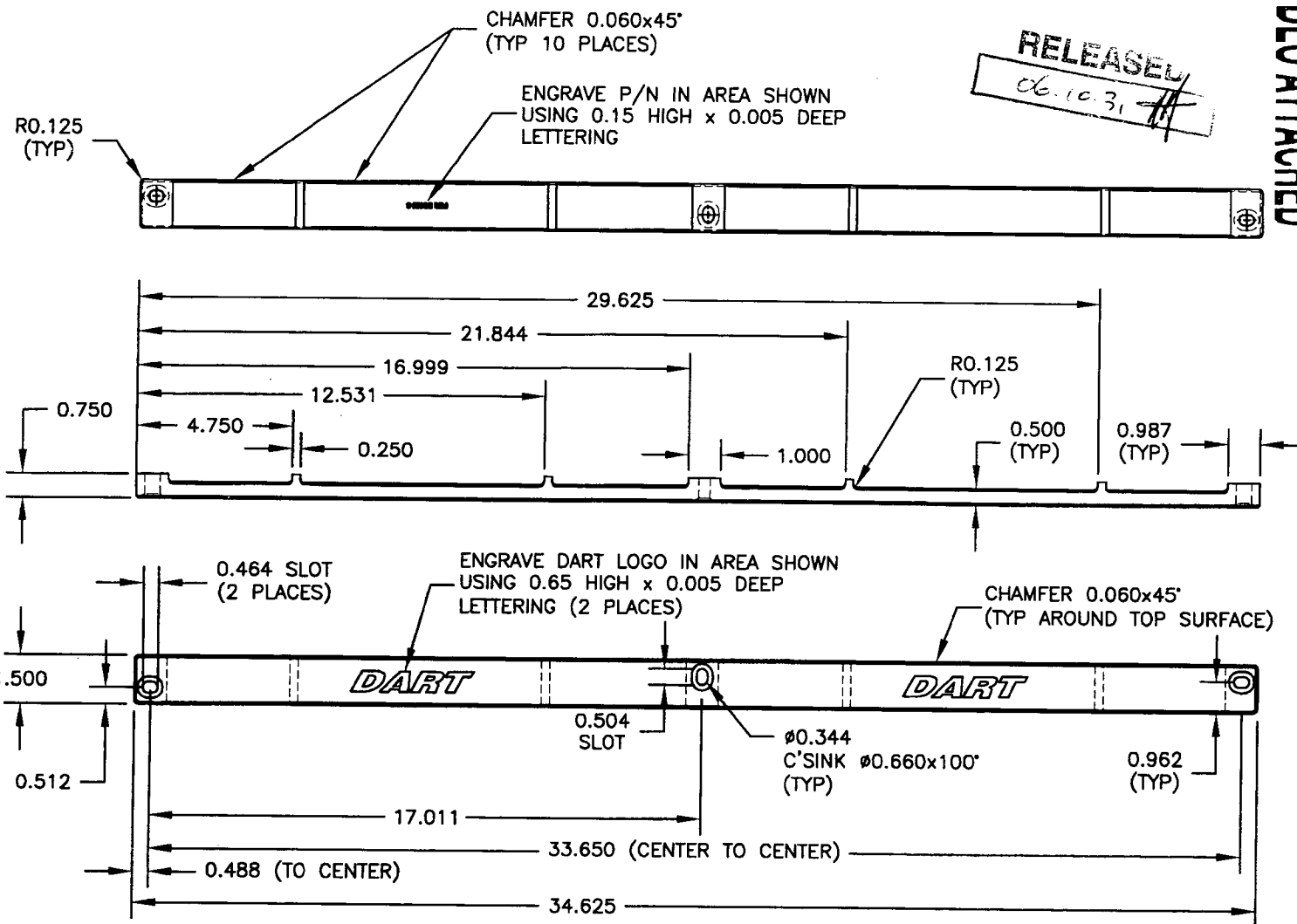
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

86903

DART**DEO ATTACHED**RELEASED
06.10.31**D3196-3 BAR**

- 1) MATERIAL: 6061-T6/T651 ALUMINUM (QQ-A-200/8 OR QQ-A-225/8)
(REF DART SPEC. M6061T6B)
- 2) BREAK ALL SHARP EDGES 0.005 TO 0.010
- 3) FINISH: ACID ETCH AND ALODINE PER DART QSI 005 4.1
POWDER COAT GREY SANDTEX (4.3.5.6) PER DART QSI 005 4.3
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES

DESIGN	APPROVED	DRAWING NO.	REV. C
CHECKED	APPROVED	D3196	SHEET 2 OF 3
DATE	TITLE	SCALE	
06.10.31	BAR	1:5	

DART AEROSPACE LTD
HAMKESBURY, ONTARIO, CANADA

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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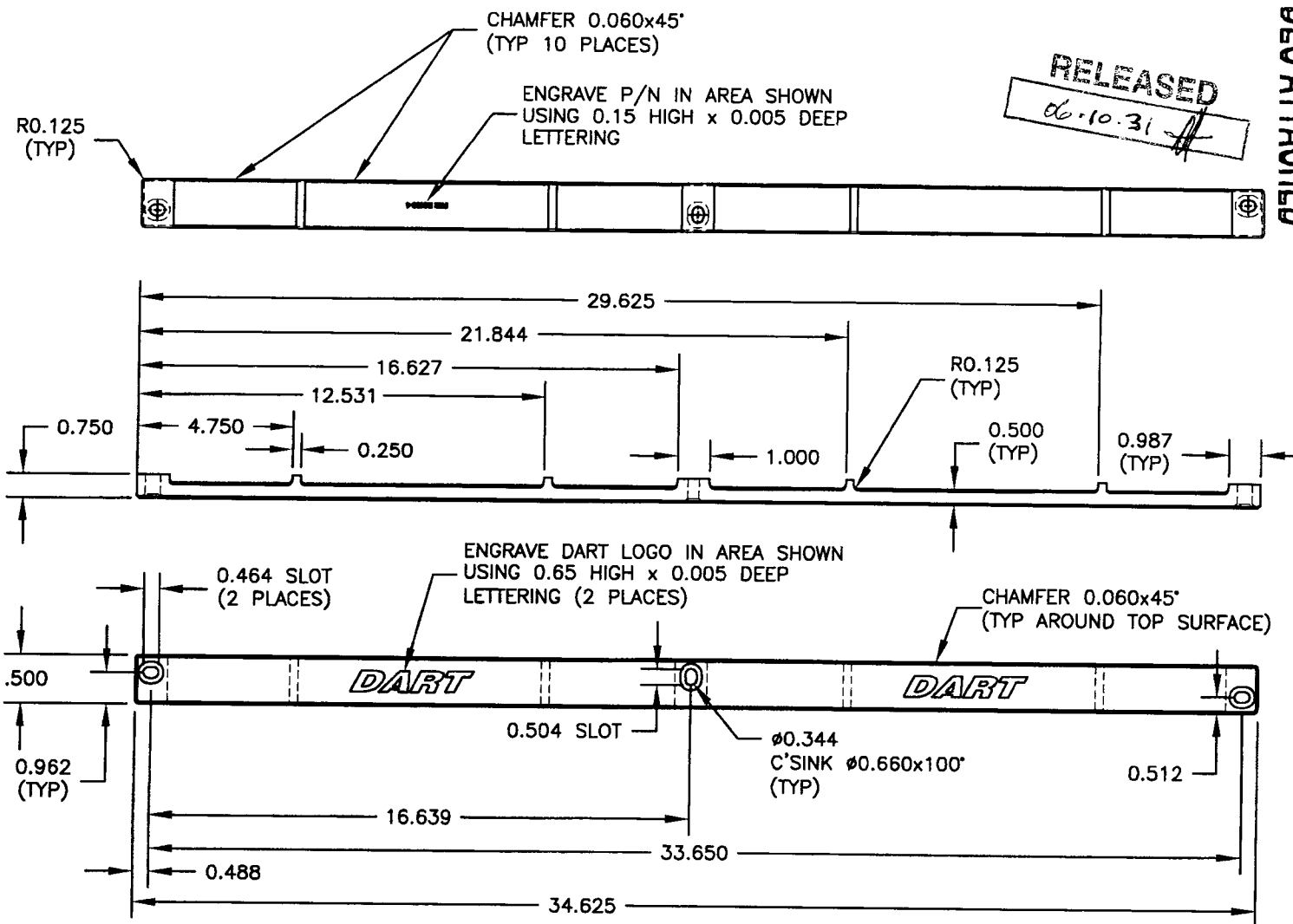
NOTE: Date & initial all entries

86903



DEO ATTACHED

RELEASED
06-10-31



DESIGN	APPROVED	DRAWING NO.	REV. C
CHECKED PH	APPROVED	D3196	SHEET 3 OF 3
DATE 06.10.31	TITLE BAR		SCALE 1:5

D3196-4 BAR

- 1) MATERIAL: 6061-T6/T651 ALUMINUM (QQ-A-200/8 OR QQ-A-225/8)
(REF DART SPEC. M6061T6B)
- 2) BREAK ALL SHARP EDGES 0.005 TO 0.010
- 3) FINISH: ACID ETCH AND ALODINE PER DART QSI 005 4.1
POWDER COAT GREY SANDTEX (4.3.5.6) PER DART QSI 005 4.3
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DRAWING NO. D3196	TITLE BAR	REV. C	DART AEROSPACE LTD ENGINEERING ORDER	D.E.O. NO. D3196-C-1	SHEET NO. SHEET 1 OF 2	SCALE NTS
DRAWN <i>ASS</i>	CHECKED <i>[Signature]</i>	MFG. APPR. <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DE APPR. <i>[Signature]</i>		
DATE 08.08.27	DATE 08.08.28	DATE 08.08.29	DATE 08.08.29	DATE 08.08.29	DATE 08.09.04	

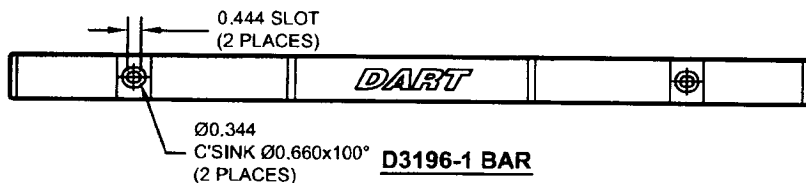
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IS:



D3196-1 BAR

WAS:

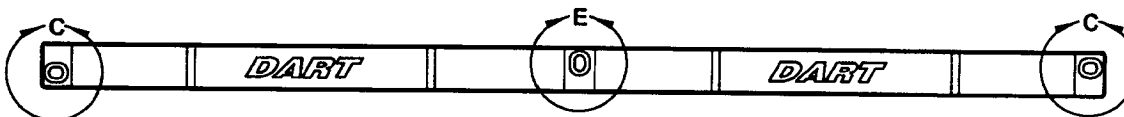


D3196-1 BAR

86903

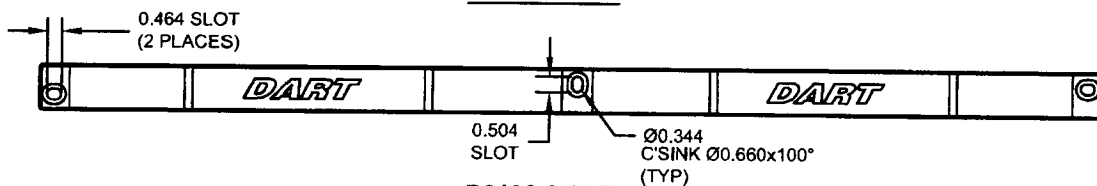
SHEET 2 MODIFY SLOT DIMENSIONING ON D3196-3 AS SHOWN:

IS:



D3196-3 BAR

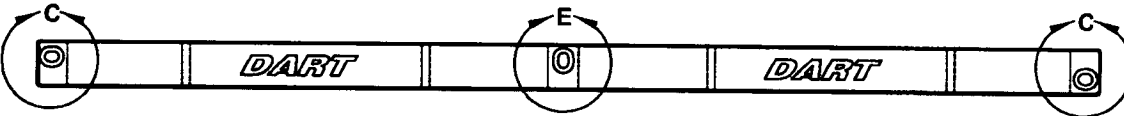
WAS:



D3196-3 BAR

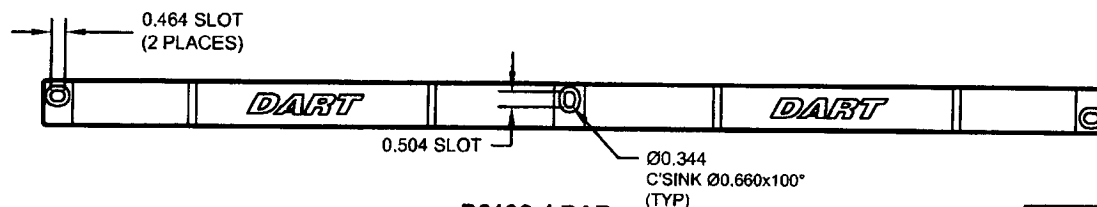
SHEET 3 MODIFY SLOT DIMENSIONING ON D3196-4 AS SHOWN:

IS:



D3196-4 BAR

WAS:



D3196-4 BAR

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

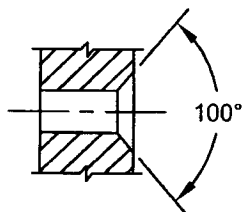
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

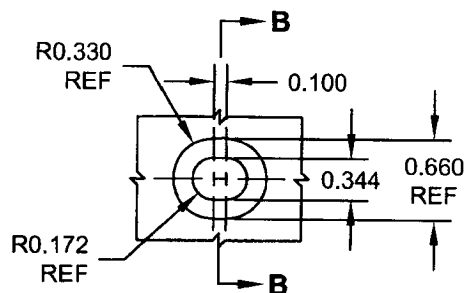
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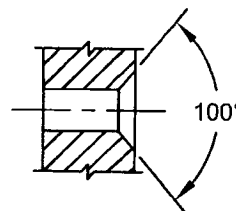
DRAWING NO. D3196	TITLE BAR	REV. C	DART AEROSPACE LTD ENGINEERING ORDER	D.E.O. NO. D3196-C-1	SHEET NO. SHEET 2 OF 2	SCALE NTS
DRAWN <i>ASS</i>	CHECKED <i>[Signature]</i>	MFG. APPR. <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DE APPR. <i>[Signature]</i>		
DATE 08.08.27	DATE 08.08.28	DATE 08.08.29	DATE 08.08.29	DATE 08.08.29	DATE 08.09.04	



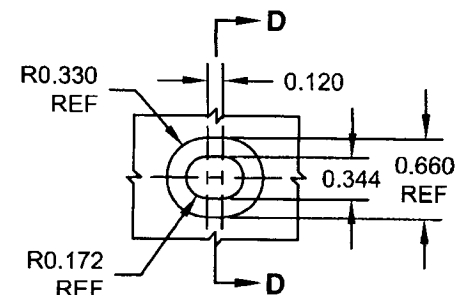
SECTION B-B



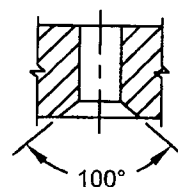
DETAIL A



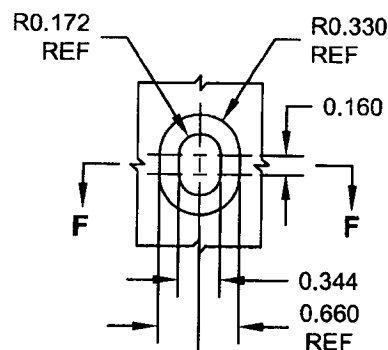
SECTION D-D



DETAIL C



SECTION F-F



DETAIL E

86903

NOTE: THIS CHANGE HAS BEEN DONE TO CLARIFY SLOT DIMENSIONS ONLY. NO CHANGES HAVE BEEN MADE TO THE PARTS
SEE NCR 08-051 FOR FURTHER INFORMATION
ALL OTHER INFORMATION REMAINS UNCHANGED

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